

REMARKS

In order to more particularly point out and distinctly claim the subject matter which Applicants regard as the invention, Claim 30 has been canceled and Claim 31 made the sole independent claim under consideration by the Examiner. Additionally, Claim 31 has been amended to limit the phosphorus compound used in the present invention. Newly presented Claims 38-50 are directed to preferred embodiments of the present invention. No new matter has been added. Favorable consideration is respectfully solicited.

Claims 18-21, 30, 32 and 35 have been rejected under 35 USC 103(a) as being unpatentable over Sano et al in view of Morimoto. Claims 31, 33, 34, 36 and 37 have been rejected under 35 USC 103(a) as being unpatentable over Sano et al in view of Morimoto and further in view of Jeong et al. Applicants respectfully traverse this ground of rejection and urge reconsideration in light of the following comments.

The presently claimed invention is directed to a plated resin molded article that has a metal plating layer provided on the surface of a thermoplastic resin article formed from a composition comprising the following components:

(A) 10 to 90 mass % of a matrix resin that has a water absorption after 24 hours in 23°C water, according to ISO62, of at least 0.6%;

(B) 90 to 10 mass % of a polyphenylene ether-based resin;

(C) a water-soluble substance having a solubility at 25°C of not more than 300g in 100g of water and selected from the group consisting of pentaerythritol and dipentaerythritol in an amount of 0.01 to 50 mass parts per 100 mass parts of the sum of components (A) and (B);

(D) at least one of a surfactant and a coagulant in an amount of 0.01 to 10 mass parts per 100 mass parts of the sum of components (A) and (B); and

(E) a phosphorus compound comprising one or more members selected from the group consisting of a condensed phosphate ester, an aliphatic acid aromatic phosphate ester of an orthophosphate ester, an alkali metal salt of melamine polyphosphate triphosphoric acid, pyrophosphoric acid, orthophosphoric acid or hexametaphosphoric acid and phytic acid, an alkali metal salt thereof and an alkanolamine salt thereof in an amount of 0.1 to 30 mass parts per 100 mass parts of the sum of components (A) and (B).

As explained in the previous Response, the instant invention provides a plated resin molded article having a high adhesive strength between a thermoplastic resin molded article and a metal plating layer and produces a plated resin molded article having a beautiful aesthetic appearance. The process of the present invention avoids heavy metal-containing acids or potassium permanganate and thereby avoids the environmental hazards which are associated with conventional methods. Moreover, the components of the present invention act together in a synergistic manner to provide a thermoplastic resin molded article having an improved adherence strength to the metal plating layer. It is respectfully submitted that the presently claimed invention is patentably distinguishable over the prior art cited by the Examiner.

As discussed previously, the Sano et al reference is directed to a plated polyamide resin article which is obtained by plating, with a suitable plating substance, a molded article of a polyamide resin composition from 30 to 80% by weight of a polyamide resin, from 20 to 70% by weight of a polyphenylene ether resin, from 1 to 50 parts by weight, per 100 parts by weight of the sum of the polyamide and polyphenylene ether resins, of an impact modifier and from 0.01 to 30 parts by weight, per 100 parts by weight of the sum of the polyamide and polyphenylene ether resins, of a compatibilizer, in which the polyamide resin forms a continuous phase and the polyphenylene ether resin forms a dispersed phase, with a polyamide resin having a crystallinity

of from 20-55% with a crystalline region thereof being not less than 72% in the γ crystal form. The Examiner further states that this reference does not teach that the polyamide composition may further comprise pentaerythritol. Applicants further submit that this reference just contains a generic disclosure and does not disclose any specific compositions which fall within the scope of the present claims and, as such, showings of unobviousness of the present invention over resin compositions that fall within the scope of Sano et al but outside of the scope of the present claims are sufficient to establish the patentability of the presently claimed invention over this reference in combination with any other reference.

The Morimoto reference has been cited by the Examiner as teaching that 0.05-5 wt.% of dipentaerythritol can be added to a polyamide composition in order to give good fluidity and mechanical strength properties to the composition. It is assumed that the Jeong et al reference has been cited to teach the addition of phosphorus compounds to a polyamide resin composition as a flame retardant. Assuming that the references teach what the Examiner has suggested they teach, at best the Examiner has made a showing of prima facie obviousness under 35 USC 103(a) which can be rebutted by showings of unexpectedly improved properties of the presently claimed composition commensurate in scope with the claims. It is respectfully submitted that such showings are of record in the present application.

The Sano et al reference is the primary reference cited by the Examiner and, as such, is assumed to be the prior art that is closest to the presently claimed invention. As discussed previously, a Declaration Under 37 CFR 1.132 is of record which presents test data establishing the criticality of the claimed components in the instant invention. In the previously filed Declaration, Comparative Example A prepared a resin molded article from a composition identical to Example 7 of the present application except for using maleic acid as

disclosed in Sano et al instead of dipentaerythritol. Maleic acid is specifically disclosed as being a compatibilizer in column 5, line 16 of Sano et al. The results in the previously filed Declaration show that the composition of Comparative Example 8 resulted in an adhesive strength of 85 kPa. In contrast thereto, due to Example 7 containing dipentaerythritol as a water-soluble substance (C) according to the present invention, an adhesive strength of 120 kPa was achieved. Applicants are not required to test a comparative composition containing dipentaerythritol as this would be forcing Applicants to test their own invention against itself. Applicants are only required to test the claimed invention against the closest prior art which has been done in the present application. The showings of unobviousness of the presently claimed invention clearly has been established and the Examiner is respectfully requested to reconsider the present application and to pass it to issue.

Respectfully submitted,


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